Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson BTEC Level 3 Nationals Extended Certificate, Foundation Diploma, Diploma, Extended Diploma

Centre Number | | | | | | |

Learner Registration Number | | | | | | | | |

Monday 20 January 2020

Morning (Time: 2 hours) | Paper Reference **31760H**

Information Technology

Unit 1: Information Technology Systems

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 90.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

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Answer ALL questions. Write your answers in the spaces provided.

1 Fulmill is an inner-city suburb. Fulmill Community Group (FCG) has been set up to encourage local people to become involved in the community.

FCG produces a newsletter providing local news and information. The newsletter is currently printed to be collected from local shops. FCG is considering replacing the printed copy with an online version.

(a) (i) Give **two** drawbacks for members of the community of replacing the printed copy with an online version.

(2)

(ii) Give **two** benefits for members of the community of replacing the printed copy with an online version.

(2)

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(b) Kerry is a member of FCG. She has a BITMAP image that she wants to include in the FCG newsletter.

She is going to send the image as an email attachment. FCG has asked Kerry to convert the file into JPEG format.

(i) Explain **one** benefit to FCG of converting the file from BITMAP (.bmp) format to JPEG (.jpg) format.

(2)

(ii) Explain **one** drawback to FCG of converting the file from BITMAP (.bmp) format to JPEG (.jpg) format.

(2)

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(c) Two protocols used to control the data transmission of emails are Simple Mail Transfer Protocol (SMTP) and Internet Message Access Protocol (IMAP).

Explain the roles of SMTP and IMAP in the transmission of emails.

(4)

SMTP

IMAP

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(d) Kerry has antivirus software installed on her computer.

Kerry keeps the antivirus software up to date.

Describe how keeping the antivirus software up to date reduces the risks of viruses on the computer.

(4)

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(e) FCG is considering setting up an online community on a social media site.

Discuss how FCG can ensure that the social media site provides a positive user experience for the online community.

(8)

(Total for Question 1 = 24 marks)

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QUESTION 2 BEGINS ON THE NEXT PAGE.

2 Bassett's college has a local area network (LAN) that can be accessed by students on-site and remotely.

(a) Access to the server room is restricted by a keypad entry system. A four-digit code is issued to authorised users on a weekly basis.

The college is considering changing to an ID card entry system.

Explain **two** ways in which an ID card entry system makes access to the server room more secure than a keypad entry system.

(4)

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(b) Students gain access to the college network with usernames and passwords.

Describe the process used by the system to authenticate passwords and allow access to the system.

(4)

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(c) Students often use the college network to help them work collaboratively on projects.

Explain **two** features of the college network that students can use to work collaboratively.

(4)

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(d) Many students use personal laptops to access the college network. This can have implications for the security of data stored on the network.

Discuss systems and procedures that the college and students could use to keep data on the network secure, when students access the network using their personal laptops.

(8)

(Total for Question 2 = 20 marks)

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3 Joe runs a small company. The company is moving to a purpose-built office.

Joe has asked an IT expert for advice about suitable IT systems. The IT expert has proposed several alternative solutions.

One solution is to set up a local area network (LAN) that will provide:

- wired connections for five PCs
- a file server
- a backup server
- two networked printers
- secure internet access
- wireless access for laptops and other mobile devices.

(a) Draw a diagram to show the setup of the LAN.

The diagram should include:

- the devices used by the system
- the connections between the devices
- annotations indicating the devices and the types of connections.

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Use this space to draw your diagram for Q3a.

(6)

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(b) The proposed LAN has five PCs with wired connections.

Explain **two** implications of using a wired rather than a wireless connection.

(4)

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(c) A network operating system will be installed on the file server. One role of a network operating system is to manage security.

Describe **two other** roles of a network operating system.

(6)

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(d) One other proposal is to use cloud storage for backup rather than using an on-site server.

Discuss the implications for the company of using cloud storage for backup rather than an on-site server.

(8)

(Total for Question 3 = 24 marks)

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QUESTION 4 BEGINS ON THE NEXT PAGE.

4 GBA provides financial services and advice to clients.

The company is relocating to a smaller office.

Following the move, GBA will offer some employees the option to work from home.

(a) Discuss how technology enables employees to work effectively from home.

You should consider factors affecting:

- access to systems and data
- communication
- data security.

(10)

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(b) As part of the move, GBA is considering updating all of its IT systems, some of which are over five years old.

Evaluate the advantages and disadvantages of updating all of its IT systems. You should consider the impact on:

- GBA
- the employees.

Your answer should include a recommendation for GBA on whether to proceed with the update of its IT systems.

(12)

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(Total for Question 4 = 22 marks)

TOTAL FOR PAPER = 90 MARKS

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